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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,628	02/03/2004	M. Brandon Steele	023228-0109	9539

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FOLEY & LARDNER  
321 NORTH CLARK STREET  
SUITE 2800  
CHICAGO, IL 60610-4764

EXAMINER

WALLING, MEAGAN S

ART UNIT PAPER NUMBER

2863

DATE MAILED: 09/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/771,628

Applicant(s)

STEELE ET AL.

Examiner

Meagan S. Walling

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-31 and 36-44 is/are allowed.
- 6) ☒ Claim(s) 32 and 35 is/are rejected.
- 7) ☒ Claim(s) 33 and 34 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/27/04, 1/27/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 32 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Knowles et al. (US 5,546,477).

Regarding claim 32, Knowles et al. teaches decomposing the signal data into a wavelet domain (column 6, lines 16-19); obtaining a plurality of coefficients at a finite number of scales (column 11, lines 6-7); selecting for a peak signal (column 10, lines 3-6); and reconstructing the data by the coefficients in reverse order (column 13, lines 53-56).

Regarding claim 35, Knowles et al. teaches that the signal data is decomposed into the wavelet domain using a wavelet selected from the group consisting of “Coiflet”, “Daubechies”, and “Symmlet” (column 11, lines 1-3).

### ***Allowable Subject Matter***

2. Claims 33-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The primary reason for the indication of allowability of claim 33 is the inclusion of the limitation that the peak signal is selected by selecting only wavelet coefficients at fine scales and by shrinking the fine scale coefficients based on a threshold. It is this limitation in the claimed combination that has not been found, taught, or suggested by the prior art that makes these claims allowable.

3. Claims 1-31 and 36-44 are allowed.

The following is an examiner's statement of reasons for allowance:

The primary reason for the allowance of claim 1 is the inclusion of the limitation of providing a wafer having a surface; providing a non-vibrating contact potential difference sensor; scanning the semiconductor wafer relative to the non-vibrating contact potential difference sensor; generating contact potential difference data from the non-vibrating contact potential difference sensor; and processing the non-vibrating contact potential difference sensor data to automatically detect a pattern that represents the defect. It is this limitation in the claimed combination that has not been found, taught, or suggested by the prior art that makes these claims allowable.

The primary reason for the allowance of claim 36 is the inclusion of the limitation of modeling the circuit as a first order RC circuit; converting the non-vibrating contact potential difference sensor signal into a discrete time transfer function; determining the impulse response of the discretized time transfer function; and deconvoluting each data track separately. It is this limitation in the claimed combination that has not been found, taught, or suggested by the prior art that makes these claims allowable.

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The primary reason for the allowance of claim 37 is the inclusion of the limitation of a non-vibrating contact potential difference sensor; a height sensor; a device for moving the sensor relative to the semiconductor wafer; and a computer for receiving and analyzing wafer data generated by the sensor and processing the non-vibrating contact potential difference sensor data to automatically detect a pattern that represents a defects. It is this limitation in the claimed combination that has not been found, taught, or suggested by the prior art that makes these claims allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Meagan S. Walling whose telephone number is (571) 272-2283. The examiner can normally be reached on Monday through Friday 8:30 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

msw

**BRYAN BUI**  
**PRIMARY EXAMINER**

